ABSTRACT

Methods and apparatus, including computer program products, for defining and using data types at runtime. A procedural source code program is compiled to generate a compiled program having instructions to create a runtime data type and to use the runtime data type.

5   The runtime data type has a compound structure of referenced data types. Instructions to create a runtime data type having a compound structure are executed by creating a runtime data type definition from the compound structure of referenced data types by resolving the referenced data types bottom up into data types known at runtime. A data object having the runtime data type is created. Type checking is performed on uses of the data object at

10   runtime according to the runtime data type.

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